







# USER MANUAL

## 1. Safety Guidelines:

### 1.1 General

- **Read completely before installation.**
- The information contained in this manual will assist you in properly installing a functioning operating system, proper disposal and avoiding serious injury or harm.
- **CAUTION:**  LiFePO4 batteries if punctured may emit a hazardous electric vapor.
- **Toxic Vapor:**  May be harmful to inhale and cause inflammation of the lungs.
- **DANGER:**  Short Circuitry
- Do not power on electronics or discharge battery if any type of serious impact from force, or puncture has caused damage or has compromised the lithium pack.
- If a battery pack has leaking fluids, do not touch any fluids.
- Dispose of a leaking battery pack (see Disposal and Recycling in this document).
- In case of eye contact with fluid, do not rub eyes. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the fluid remains. Seek medical attention.
- **DO NOT** disassemble. Warranty will be void. No Exception.
- **DO NOT** Operate electronics or battery if there are loose connection or when poor wire connections are present.
- **DO NOT** use or operate battery outside of its specified limits.
- **DO NOT** close to flammable and explosive materials during charging or storage;

## 1.2 Proper Disposal:

- **RoHs complaint:**  This battery pack does not contain lead or mercury. This battery is Please contact the proper authority to recycle/ dispose of properly.
- Do not heat a battery or dispose of a battery in fire or water.

## 2. Handling Precautions:

- All Abyss Batteries have an IP65 rating. they are waterproof and can withstand being exposed in an outdoor environment for long periods of time.
- Avoid exposing the battery to excessive shock or vibration.
- Keep out of reach and away from children.

### 2.1 Temperature Regulations:

- Do not use a battery if found overheat (55°C), smells, deformation or other reaction.
- Do not expose a battery directly to temperatures above 60°C (140°F) during using, charging or storage period.

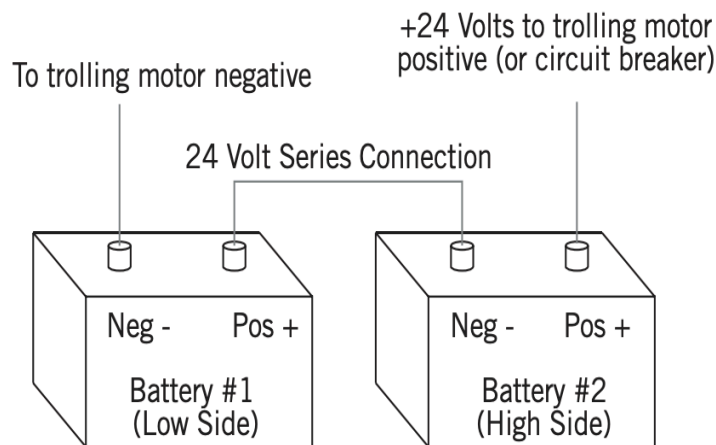
### 2.2 Connection Rigging:

- **DO NOT** reverse the installation when load in equipment and do not reverse positive and negative pole of a battery when using;
- **DO NOT** short the external contacts on a battery.

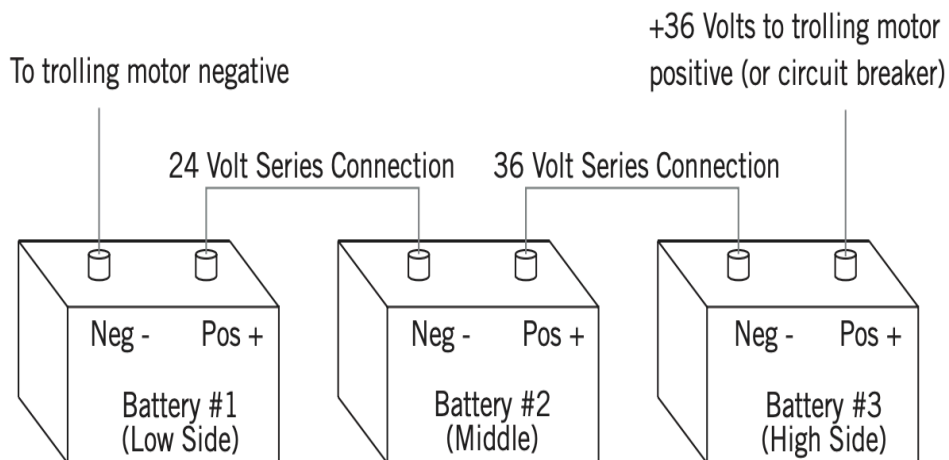


# BATTERY INSTALLATION & CHARGING

## 2.3 Series Battery Connections



- 24V connection with two 12V batteries (Figure 1.)



- 36V connection with three 12V batteries (Figure 2.)



# DISCLAIMER

## 3. Charging:

- Only use specified or allowed charging voltage and current in accordance to a battery standard charger or adapter.
- Charge a battery in time when it is discharged out of power, this can prolong life cycles of battery.
- **DO NOT leave your battery charging overnight.** Our batteries only take two hours to fully charge and is not necessary.
- Battery may swell and damage overtime.

## 3.1 Storage:

- During the loading and unloading process of the battery, pay attention to move and put down lightly, throwing, rolling, crush, mixing with other dangerous goods are prohibited.
- Minimize the number of transit transport; machinery operation should be used during shipping and handling to avoid the rough handling operations. During the process of transport and use, overly strong impact and extrusion by external should be avoided, to prevent battery casing broken or internal structure damage.

## 4. Disclaimer:

- We do not take the responsibility for losses or accident resulting from improper use, or facts identified as the following:

- Not use reliable BMS or protective plate when doing charging or discharging test, resulting in overcharge or over-discharge for part or the whole battery group; BMS.
- Batteries are charged reversely due to the wrong connection, resulting in part or the whole battery group retirement in advance.
- Not control the battery group charging effectively, resulting in part or the whole battery group over-charging.
- Improper selection of charger, adapter, circuit cable, connectors, terminals and other electrical component without permission by vendor, resulting fire due to line overheating and spontaneous combustion.
- There is not an appropriate high-voltage safety protection device in the main power circuit, resulting in the battery pack short-circuit or equipment damage due to the circuit aging, damage, etc.
- The cable terminals of the main power circuit are not well connected to bus bar and battery terminals, resulting in attenuation of battery life, and even accident for loose connecting bolts and exothermic joints.
- Infrequent check on the battery condition and maintenance, resulting in accidents for not discovering and excluding hidden danger in time.